

**WHAT IS CLAIMED IS:**

1           1.    A method, comprising:  
2                setting a time interval between a first set of query  
3 messages to each of a plurality of routers to a number  
4 greater than a querier timeout period used by said plurality  
5 of routers, where said querier timeout period transitions  
6 each of said plurality of routers into a querier;  
7                revealing presence of said each of said plurality of  
8 routers by sending a second set of query messages; and  
9                sending membership report messages to said plurality of  
10 routers.

1           2.    The method of claim 1, wherein said querier  
2 timeout period is about 255 seconds.

1           3.    The method of claim 2, wherein said time interval  
2 is longer than 255 seconds.

1           4.    The method of claim 2, wherein said time interval  
2 is about 300 seconds.

1           5.    The method of claim 1, wherein said second set of  
2 query messages includes queries to determine which host  
3 groups have members on directly attached networks.

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1           10. An IGMP switch system, comprising:  
2           a plurality of routers to route Internet Protocol (IP)  
3 data, said plurality of routers also generating query  
4 messages;  
5           a plurality of hosts to send and receive said IP data,  
6 said plurality of hosts also generating report messages; and  
7           an IGMP pruning switch having a plurality of switch  
8 ports, said switch ports to provide interfacing of said  
9 plurality of hosts and routers, where said IGMP pruning  
10 switch provides query messages and report messages to be  
11 transferred in such states as to allow determination of  
12 presence of said plurality of routers and hosts.

1           11. The system of claim 10, wherein said pruning  
2 switch allows said plurality of hosts to issue report  
3 messages in a host state.

1           12. The system of claim 10, wherein said pruning  
2 switch allows said plurality of routers to issue query  
3 messages in a router state.

1           13. The system of claim 10, wherein said pruning  
2 switch determines whether each switch port is a host or  
3 router port in a discovery state by setting a time interval  
4 between a set of query messages to a number greater than a  
5 querier time out period so that said each switch port  
6 reveals its state.

1           14. An IGMP switch system, comprising:  
2           a plurality of routers to route Internet Protocol (IP)  
3 data, said plurality of routers also generating query  
4 messages;  
5           a plurality of hosts to send receive said IP data, said  
6 plurality of hosts also generating report messages; and  
7           a plurality of IGMP pruning switches, each switch  
8 having a plurality of switch ports, said switch ports to  
9 provide interfacing of said plurality of hosts and routers,  
10 where said IGMP pruning switch provides query messages and  
11 report messages to be transferred in such states as to allow  
12 determination of presence of said plurality of routers and  
13 hosts.

1           15. The system of claim 14, wherein said plurality fo  
2 IGMP pruning switches are connected to each other, and  
3 connecting ports are in a router state.

1           16. An apparatus comprising a machine-readable storage  
2 medium having executable instructions that enable the  
3 machine to:

4           set a time interval between a first set of query  
5 messages to a number greater than a querier timeout period  
6 used by said plurality of routers, where said querier  
7 timeout period transitions each of said plurality of routers  
8 into a querier;

9           reveal presence of said each of said plurality of  
10 routers by sending a second set of query messages; and

11           second send membership report messages to said  
12 plurality of routers.

13           17. The apparatus of claim 16, wherein said querier  
14 timeout period is about 255 seconds.